substantial amount of haemodynamic data which is available about the human cerebral circulation, in particular regarding the myogenic response. Nevertheless, this monograph provides much information about the properties of the cerebral vasculature, and may be useful as a source of reference for research workers concerning this important area.

M.J. Mulvany

Methods to Assess DNA Damage and Repair Interspecies Comparisons; Edited by R.G. Tardiff, P.H.M. Lohman and G.N. Wogan, Wiley and Sons; Chichester, 1994; xxiv + 257 pages. $45.00. ISBN 0-471-94256-1.

This volume represents seven contributed papers and a joint report prepared at a workshop held at the National Institute of Environmental Health Sciences (NIEHS), Research Triangle Park, North Carolina, USA in March 1990.

In this fast moving field of DNA damage and repair, the 4.5 year publication time unfortunately renders many of the papers somewhat out of date. There has been major new technical and conceptual developments since 1990, and in the area of DNA repair our understanding has changed dramatically. Apart from this severe deficiency there are some well written, comprehensive chapters in this book that gives the reader a useful perspective.

In the area of DNA damage, chapters 5, 12 and 13 are useful. The chapter by Beland and Poirier on different types of DNA damage provides a good overview which is still timely. Also, the chapter on shuttlevectors by Wood, Verghis and Essigman is useful and gives the reader ample background for the understanding of these types of experiments which have been important in the field.

The book starts with 3 chapters of general conclusion and recommendation. The recommendations here are appropriate and should generate interest, and provides a source of direction in the field. Whereas the chapter on DNA repair considerations is a bit outdated, the one on DNA damage provides some useful considerations and recommendations in the area of studying structure-activity relationships, and may be useful to have in major libraries.

V.A. Bohr

The Tachykinin Receptors; Edited by S.H. Buck, Humana Press; Totowa, New Jersey, 1994; xi + 630 pages. $125.00. ISBN 0-89603- 266-3.

This volume is a timely and valuable addition to the series 'The Receptors' edited by David B. Bylund. The work satisfies a real need for information and clarification for both the peptide pharmacologist and the more general reader in what has become a complex area of research. The contributors have tried hard to make a specialized and rapidly advancing field more generally accessible. In this regard, it is gratifying that, after several years of often acrimonious dispute, there is agreement among the authors regarding nomenclature for both the tachykinin ligands and their receptors. Neurokinin A and neurokinin B replace earlier terms such as substance K and neuromedin K and the NK_1, NK_2 and NK_3 classification of receptor subtypes is used exclusively throughout. The poor confused reader is entitled to a sigh of relief. In general, the chapters are well referenced and provide a concise review of the state of our knowledge, at least until the end of 1993.

Two introductory chapters provide the reader with an historical perspective as to how the study tissues as diverse as the salivary gland of the octopus, the skin of South American frogs and the rat vas deferens has led to our understanding of the multiplicity of the tachykinin peptides and the selectivity of their receptors. Methodological chapters describe, in sufficient detail to be of use to someone who actually proposes to perform the experiments, the techniques of radioligand binding assays, the use of recently available selective agonists and antagonists to characterize receptor subtypes and autoradiographic techniques to localize tachykinin receptors in both the brain and peripheral tissues. Up-to-date chapters on the molecular biology of tachykinin receptors summarize clearly the results of molecular cloning experiments in different mammalian species and the attempts to identify ligand binding sites in a way that is detailed but accessible to the general reader. More specialized chapters discuss post-receptor binding events and effects of tachykinins on ion-channels.

The pharmacologist is very well served by chapters describing the properties of the wide range of synthetic peptide, 'peptidoid' and non-peptide tachykinin receptor antagonists and by the comprehensive discussion as to whether their use in mammalian test systems necessitates the use of a more complex classification of receptor subtypes. The reader whose interest is primarily clinical may be a little disappointed by the more cursory treatment of the importance of tachykinin receptors in pathophysiology in the later chapters of the book. Nevertheless, attempts have been made to assess the role of the NK_1 receptor in nociception and the analgesic possibilities of suitable antagonists together with the importance of tachykinins and their receptors in the visual system, in cardiovascular regulation and in the functions of the urogenital, respiratory and gastrointestinal tracts. A final chapter provides detailed evidence for the involvement of tachykinin receptors in inflammatory bowel disease and in the responses to injuries and insults to tissues of the CNS.

Although I suspect that the book is targetted primarily towards those workers actively involved in peptide receptor pharmacology, I can strongly recommend this book to a wider readership, for example, as a teaching aid in graduate and advanced undergraduate courses.

J. Michael Conlon

Royal Microscopical Society Microscopy Handbooks. No. 29: Flow Cytometry; by M.G. Ormerod, BIOS Scientific Publishers Limited; Oxford, 1994; xi + 77 pages. $25.00. ISBN 1 872748 39 2.

This small volume is clearly meant to serve as a fast introduction to the more and more diversified field of flow cytometry. This is a daunting task to accomplish in a mere 77 pages, and while it reads very well, it is not an unqualified success.

First, the important section on how a flow cytometer works ('Instrumentation') is far too short to give the novice a realistic view on the logistics of the machine. Moreover, figures seem to have been produced during the early Macintosh era, and several of them are not very informative (especially the one on the lay-out of 'a typical flow cytometer'). Finally, while the text on optics might be very informative for the reader with some prior experience at the flow cytometer, it must be confusing for the novice.

That being said, the remainder of the book falls well within its aims with highly informative and didactive sections on fluorescence, immunofluorescence, analysis of DNA, cell proliferation and death and a short section on other applications. In the appendix section a good addition is that on 'Learned Societies'.

A great strength of the book is that references have been chosen with

the utmost care. This means that issues, which are necessarily dealt with in a synoptical manner (and fluorescence compensation is certainly one of them) can be easily looked up for the curious beginner.

All in all then, a good volume to give to your students and technicians, but probably not your post-docs. At its price, it should nevertheless be a welcome addition to any flow cytometry library, and with some improvement it should definitely become a must.

Peter Hokland

From Genotype to Phenotype; Edited by S.E. Humphries and S. Malcolm, BIOS Scientific Publishers Ltd.; Oxford, 1994; 290 pages. $99.00. ISBN 1-872748-62-7.

The editors state in the preface: "14 authors, each expert in their field, explore the problems of how the effect of different mutations – the 'genotype' of the individual – are modulated to produce variability in the clinical symptoms – the 'phenotype' shown by the patient". This statement and the title of the book are exciting, because the genotype/phenotype relationship right now is the focus of many discussions about genetic diseases. The book covers a wide variety of diseases, which in the order of chapters are: Cystic fibrosis, Collagen diseases, Gauchers disease, Familial hypercholesterolemia, Charcot-Marie-Tooth disease, Wilms' tumour, Myotonic dystrophy, Fragile X, Somatic mosaicism, Chimerism and X-inactivation, Mitochondrial DNA diseases, Diabetes, Coronary artery diseases, and gene therapy of dyslipidemias. This very diverse organisation of the book is both a strength and a weakness. The strength is that each disease and diseased gene is covered by researchers actually working in the field, assuring that data and conceptions are up to date, and that questions treated are relevant to other researchers in the field. For the clinical geneticist, reading this book is a nice way of being updated on a variety of diseases, in which molecular genetic research has opened new areas for diagnosis and predictions of clinical outcome. As a molecular geneticist it has also been a pleasure for me to get up-to-date information about diseases, of which I had only heard from colleagues and at conferences on genetics. However, this very broad selection of themes is also a weakness of the book. One can ask why this particular selection of articles has been collected. There is no natural relationship between the chapters. However, in all cases the molecular elucidation of the disease mechanisms resulted in a stage of knowledge, from which it is possible to answer some of the questions concerning genotype/phenotype relationships.

To comment on all themes is impossible. I will restrict myself to a few of the chapters representing the various types of diseases.

One of the more exciting developments during the last few years has been the elucidation of the dynamic mutations in Myotonic dystrophy and the Fragile-X syndrome, in which the disease-causing mutations are expansions of trinucleotide repeats, the array length of which seems to account for the anticipation, i.e. the phenomenon that the disease most often deteriorates from one generation to the next once it has occurred in a family. The authors have written these two chapters very informatively, and especially the chapter by Mark Hirst on Fragile X is exciting, with very good discussions about the dynamics and expansion of the CGG triplet within the FMR1 (fragile X mental retardation) gene, the structure and expression of the gene, and the mechanism of the expansion.

The chapter written by Anne Soutar on Familial Hypercholesterolemia certainly broadens out the often narrow discussions in journal papers. Since I have some knowledge of the current state of discussions among researchers in Familial Hypercholesterolemia, I highly value the chapter. It has only recently been possible for researchers working on this disease to embark on the correlation between the site and type of mutations in the LDL-receptor gene and the clinical expression of the disease. Anne Soutar sums up very nicely the current knowledge, i.e. that for homozygous patients with LDL-receptor defects there seems to exist a correlation between the severity of the mutation and the severity of the disease, but that the clinical expression in heterozygous patients are much more – and to a large extent – governed by other factors, both genetical and environmental. This chapter is a delight to read. Steve Humphries, one of the editors, also provides a chapter on coronary artery disease, especially focused on the discussion about the variability gene concept, which is based on the hypothesis that some genes affect the level of a risk factor and others determine the variability. It is an interesting concept which can be applied to many other diseases, that are influenced by risk factors, such as susceptibility genes. Susceptibility genes are the main theme in the chapter on Diabetes. A good update is given for instance on the susceptibility role of certain HLA haplotypes. I cannot fully judge the originality of the information and discussion given by Hitman, Fennessy and Metcalfe, but the discussion is certainly interesting from a more general point of view as a model-study in polygenic and multifactorial diseases.

In conclusion, this book is a good initiative to substantiate the very difficult discussions about the genotype/phenotype relationship, which in certain – perhaps in most – diseases is not only influenced by the type of mutation in the respective gene, but even more by susceptibility factors, modifying genes, and environmental conditions. The theme will explode and we are just waiting for the next book.

Niels Gregersen